

## **REMARKS**

Claims 1 and 25-58 were pending in the case. Upon entry of this Amendment, Claims 1-58 will be cancelled and Claims 59-62 will be newly added.

Applicants have added Claims 59-62 to claim the invention in more varying scope, but retain the right to pursue the subject matter of the cancelled claims in one or more divisional or continuing applications. Claims 59-62 are directed to a method of finding a herbicide which is supported in the specification at page 13, line 27 et seq where it is stated that "modulators which affect the activity of the enzyme constitute new growth-regulatory or herbicidal active compounds."

Support for newly added Claims 59-62 may be found, among other places, in the claims as originally filed in the case.

Claim 48 was objected to for dependency reasons, and those matters are believed to be overcome in newly pending Claims 59-62.

Claim 48 had been rejected under 35 U.S.C. Section 103(a) over WO 01/145533 ("Rosamond") over WO 00/15809 ("Levin"). While Claim 48 is no longer pending, pending Claims 59-62 are believed to raise the same issues, which Applicants would like to address as follows.

Rosamond describes nucleic acids coding for a PMK from the pathogenic fungus *Canadida albicans*. It further discloses a method for identifying inhibitors of the enzyme which might be used as a pharmaceutical or veterinary agent for human or animal use. Rosamond does not disclose or refer to the PMK of plants and is silent also on the effects of inhibitors of said PMK on plants. Rosamond is focused only on fungi.

In contrast, the present invention is directed to methods (or assays) to identify herbicides, not only inhibitors of the enzyme, and pending Claims 59-62 are directed to that invention. At the basis of the invention lies the discovery by the inventors that plant PMKs are susceptible to small molecules and especially that inhibiting a plant PMK with such small molecules results in severe damage or the death of the plant. It was heretofore unknown that inhibitors of the plant PMK enzyme can be used as herbicides. Rosamond only discloses at best that inhibitors of the fungal PMK enzyme might be used as antimycotics. Therefore the disclosure of Rosamond does

not teach nor does it suggest any method for finding herbicides. No motivation would be drawn from a person skilled in the art to believe that it is possible to find new herbicides based on assays performed with plant PMKs.

Levin does not supply the missing teaching or motivation. Levin discloses a method of using uracil permease from plants for the discovery of herbicides. A person with skill in the art would not be taught or even motivated from what is disclosed in Levin to consider that plant phosphomevalonate kinases could be used as herbicides.

Taking Rosamond and Levin together, a person skilled in the art would not have arrived at a method of finding herbicides based on a phosphomevalonate kinase screening as is claimed in the pending claims, the reason being that neither document teaches that inhibitors of plant PMK are active herbicides.

There are numerous cases that explicitly state that to combine references to reach a conclusion of obviousness, that there must have been some motivation in the art directing one to the combination and that using the hindsight provided by the invention is not permitted.

Applicants respectfully assert that the Office Action has not established a prima facie case of obviousness because there is no teaching, motivation or suggestion in the references to combine the references with one another to arrive at the instantly claimed combination, and because it is only through impermissible hindsight using the Applicants' specification as a guide that one would be motivated to combine the references. (MPEP Section 2142 states that "the tendency to resort to "hindsight" based upon applicant's disclosures is often difficult to avoid due to the very nature of the examination process. However, impermissible hindsight must be avoided and the legal conclusion must be reached on the basis of the facts gleaned from the prior art.")

As noted in MPEP Section 2143.01, obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion or motivation to do so found either in the references themselves or in the knowledge generally available to one of

ordinary skill in the art, citing *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed Cir 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed Cir. 1992).

Clearly, there is no such teaching, suggestion or motivation shown in the references in this case to arrive at the present invention. The Examiner has selected one reference for a given point and another for a second point, but has not shown a third reference or where in each cited reference there is some motivation or suggestion to combine the references to arrive at the present invention. The Examiner relies on the skill of one of ordinary skill in the art to supply this information, but this is clearly not permitted unless it is supported by the Examiner. MPEP Section 2144.03 states that if Applicant traverses such an assertion of what one skilled in the art would or would not know (and Applicants do in this case), **the Examiner should cite a reference in support of his or her position.** Applicants hereby request such a reference. If the Examiner is relying on facts within his personal knowledge, Applicants respectfully request and are calling for, pursuant to MPEP Section 2144.03 and 37 C.F.R. Section 104, that the Examiner support such facts by an Affidavit.

Applicants' respectfully remind the Examiner about case of *In re Lee*, 61 USPQ2d 1430 (CAFC January 18, 2002):

As applied to the determination of patentability *vel non* when the issue is obviousness, "it is fundamental that rejections under 35 U.S.C. §103 **must be based on evidence** comprehended by the language of that section." *In re Grasselli*, 713 F.2d 731, 739, 218 USPQ 769, 775 (Fed. Cir. 1983). The essential factual evidence on the issue of obviousness is set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 17-18, 148 USPQ 459, 467 (1966) and extensive ensuing precedent. The patent examination process centers on prior art and the analysis thereof. When patentability turns on the question of obviousness, the search for and analysis of the prior art includes evidence relevant to the finding of whether there is a teaching, motivation, or suggestion to select and combine the references relied on as evidence of obviousness. *See, e.g., McGinley v. Franklin Sports, Inc.*, 262 F.3d 1339, 1351-52, 60 USPQ2d 1001, 1008 (Fed. Cir. 2001) ("the central question is whether there is reason to combine [the] references," a question of fact drawing on the *Graham* factors).

**"The factual inquiry whether to combine references must be thorough and searching."** *Id.* **It must be based on objective evidence of record.** This precedent has been reinforced in myriad decisions, and cannot be dispensed with. *See, e.g., Brown & Williamson Tobacco Corp. v. Philip Morris*

*Inc.*, 229 F.3d 1120, 1124-25, 56 USPQ2d 1456, 1459 (Fed. Cir. 2000) (“a showing of a suggestion, teaching, or motivation to combine the prior art references is an `essential component of an obviousness holding”) (quoting *C.R. Bard, Inc., v. M3 Systems, Inc.*, 157 F.3d 1340, 1352, 48 USPQ2d 1225, 1232(Fed. Cir. 1998)); *In re Dembiczak*, 175 F.3d 994, 999, 50 USPQ2d 1614, 1617(Fed. Cir. 1999) (**“Our case law makes clear that the best defense against the subtle but powerful attraction of a hindsight-based obviousness analysis is rigorous application of the requirement for a showing of the teaching or motivation to combine prior art references.”**); *In re Dance*, 160 F.3d 1339, 1343, 48 USPQ2d 1635, 1637 (Fed. Cir. 1998) (there must be some motivation, suggestion, or teaching of the desirability of making the specific combination that was made by the applicant); *In re Fine*, 837 F.2d 1071, 1075, 5 USPQ2d 1596, 1600 (Fed. Cir. 1988) (“teachings of references can be combined *only* if there is some suggestion or incentive to do so.”) (emphasis in original) (quoting *ACS Hosp. Sys., Inc. v. Montefiore Hosp.*, 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984).

The need for specificity pervades this authority. See, e.g., *In re Kotzab*, 217 F.3d 1365, 1371, 55 USPQ2d 1313, 1317(Fed. Cir. 2000) (**“particular findings must be made as to the reason the skilled artisan, with no knowledge of the claimed invention, would have selected these components for combination in the manner claimed”**); *In re Rouffet*, 149 F.3d 1350, 1359, 47 USPQ2d 1453, 1459 (Fed. Cir. 1998) (“even when the level of skill in the art is high, the Board must identify specifically the principle, known to one of ordinary skill, that suggests the claimed combination.

**In other words, the Board must explain the reasons one of ordinary skill in the art would have been motivated to select the references and to combine them to render the claimed invention obvious.”**; *In re Fritch*, 972 F.2d 1260, 1265, 23 USPQ2d 1780, 1783 (Fed. Cir. 1992) (**the examiner can satisfy the burden of showing obviousness of the combination “only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references”**).

[2] With respect to Lee's application, neither the examiner nor the Board adequately supported the selection and combination of the Nortrup and Thunderchopper references to render obvious that which Lee described. **The examiner's conclusory statements** that “the demonstration mode is just a programmable feature which can be used in many different device[s] for providing automatic introduction by adding the proper programming software” and that “another motivation would be that the automatic demonstration mode is user friendly and it functions as a tutorial” **do not adequately address the issue of motivation to combine. This factual question of motivation is material to patentability, and could not be resolved on subjective belief and unknown authority. It is improper, in determining whether a person**

**of ordinary skill would have been led to this combination of references, simply to "[use] that which the inventor taught against its teacher." W.L. Gore v. Garlock, Inc., 721 F.2d 1540, 1553, 220 USPQ 303, 312-13 (Fed. Cir. 1983). Thus the Board must not only assure that the requisite findings are made, based on evidence of record, but must also explain the reasoning by which the findings are deemed to support the agency's conclusion.**

....

Conclusory statements such as those here provided do not fulfill the agency's obligation. This court explained in *Zurko*, 258 F.3d at 1385, 59 USPQ2d at 1697, that **"deficiencies of the cited references cannot be remedied by the Board's general conclusions about what is 'basic knowledge' or 'common sense.'"** The Board's findings must extend to all material facts and must be documented on the record, lest the "haze of so-called expertise" acquire insulation from accountability. "Common knowledge and common sense," even if assumed to derive from the agency's expertise, do not substitute for authority when the law requires authority.

....

The determination of patentability on the ground of unobviousness is ultimately one of judgment. In furtherance of the judgmental process, the patent examination procedure serves both to find, and to place on the official record, that which has been considered with respect to patentability. The patent examiner and the Board are deemed to have experience in the field of the invention; however, this experience, insofar as applied to the determination of patentability, must be applied from the viewpoint of "the person having ordinary skill in the art to which said subject matter pertains," the words of section 103. In finding the relevant facts, in assessing the significance of the prior art, and in making the ultimate determination of the issue of obviousness, the examiner and the Board are presumed to act from this viewpoint. **Thus when they rely on what they assert to be general knowledge to negate patentability, that knowledge must be articulated and placed on the record.** The failure to do so is not consistent with either effective administrative procedure or effective judicial review. The board cannot rely on conclusory statements when dealing with particular combinations of prior art and specific claims, but must set forth the rationale on which it relies.

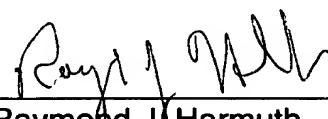
Emphasis Added.

Additionally, Applicants note that they have claimed priority of German Patent Application No. 100 57 755.5 filed November 22, 2000. Applicants also note that Rosamond was published March 1, 2001. Applicants request that if the next Office Action is not a Notification of Allowability, that the Examiner confirm in the next Office

Action that if the Applicants file a certified English language translation of their priority document, that would operate to remove Rosamond as a reference in this case.

Review and consideration of the claims and allowance thereof are respectfully requested.

Respectfully submitted,

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